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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/933,002	08/21/2001	Joseph L. Pezzaniti	2119-0144P	6093

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EXAMINER
BELLO, AGUSTIN

ART UNIT	PAPER NUMBER
2633	

DATE MAILED: 11/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/933,002	PEZZANITI ET AL.	
	Examiner	Art Unit	
	Agustin Bello	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-17 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-22 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2, 5-12, and 15-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Mao (U.S. Patent No. 6,681,081).

Regarding claims 1, 11, 16, and 17, a terminal (Figure 3) for use in a communication system including plural terminals separated by a fluid inter-terminal medium (reference numeral 28 in Figure 3) , said terminal for receiving laser pulses, which are polarized when transmitted and which have information impressed thereon, said terminal comprising: a polarization analyzer (reference numeral 31, 32 in Figure 3) having a polarization orientation; a detector (reference numeral 40 in Figure 3) operatively connected to said polarization analyzer, said detector detecting portions of the received laser pulses; and a processor (reference numeral 22 in Figure 3) operatively connected to said detector (reference numeral 40 in Figure 3) and said polarization analyzer (reference numeral 31, 32 in Figure 3), said processor operatively arranged to determine a polarization state for said polarization analyzer (e.g. via reference numeral 34 and output of reference numeral 31 in Figure 3) and operatively arranged to change the polarization orientation of said polarization analyzer to said determined polarization state (column 10 lines

14-22) said processor thereby reducing the broadening of the detected portions of the received laser pulses (e.g. "lowering the end-to-end PMD to acceptable levels" of column 10 lines 14-22).

Regarding claims 2 and 12, Mao teaches that said processor (reference numeral 22 in Figure 3) is operatively arranged to effectuate the varying of said determined polarization state to optimize reducing the broadening of the detected portions of the received laser pulses (column 10 lines 14-22).

Regarding claims 5 and 15, Mao teaches that said varying of said determined polarization proceeds based on comparing accumulated detection error (e.g. "BER" in Figure 3, and via error counter 84 in Figure 3) and a reference value (e.g. "predetermined threshold" of column 10 lines 42-44).

Regarding claim 6, Mao teaches an input operatively connected to said processor (e.g. any of the plurality of inputs connected to reference numeral 22 in Figure 3), said input being connectable to an information channel (inherent), which channel provides information about the polarization of received laser pulses when transmitted (e.g. via reference numeral 31, 32 in Figure 3).

Regarding claim 7, Mao teaches a laser pulse receiver (reference numeral 44 in Figure 3) receiving laser pulses.

Regarding claims 8 and 18, Mao teaches a laser pulse transmitter (reference numeral 24 in Figure 3) outputting polarized laser pulses (inherent).

Regarding claims 9 and 19, Mao teaches that the polarization of said outputted laser is linear, circular, or elliptical (inherent).

Regarding claims 10 and 20, Mao teaches that the polarization of the outputted pulse is modulated (e.g. "modulated optical signal" column 5 line 57).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 3, 4, 13, 14, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mao.

Regarding claims 3, 4, 13, and 14, Mao differs from the claimed invention in that Mao fails to specifically teach that said varying of said determined polarization proceeds based on comparing a reference value with a characteristic length of a detected portion of a received laser pulse. However, Mao at the very least suggests as much in disclosing a comparator (reference numeral 66 in Figure 3) for counting errors, the number in errors being input to the controller (reference numeral 22 in Figure 3) that controls varying of the polarization analyzer (reference numeral 31, 32 in Figure 3). One skilled in the art would clearly have recognized that the comparator of Mao could have been used to compare a reference value with a characteristic length of a detected portion of a received laser pulse, with the reference value being input via line 64 in Figure 3. Furthermore, it is clear that Mao's overall goal is the reduction of PMD via the detection of pulse errors caused by pulse broadening intrinsic to PMD. As such one skilled in the art would clearly have recognized that a measure and comparison of the characteristic length with a reference value would have been beneficial if not required in Mao. Therefore, it

would have been obvious to one skilled in the art at the time the invention was made to vary said determined polarization based on comparing a reference value with a characteristic length of a detected portion of a received laser pulse.

Regarding claim 21 and 22, Mao differs from the claimed invention in that Mao fails to specifically teach that said varying of said determined polarization proceeds based on comparing a value with a corresponding to the power of a received pulse with a reference value. However, Mao at the very least suggests as much in disclosing a comparator (reference numeral 66 in Figure 3) for counting errors, the number in errors being input to the controller (reference numeral 22 in Figure 3) that controls varying of the polarization analyzer (reference numeral 31, 32 in Figure 3). One skilled in the art would clearly have recognized that the comparator of Mao could have been used to compare a reference value with a value corresponding to the power of a detected portion of a received laser pulse, with the reference value being input via line 64 in Figure 3. Furthermore, it is clear that Mao's overall goal is the reduction of BER via the detection of pulse errors. As such one skilled in the art would clearly have recognized that a measure and comparison of the received power with a reference value would have been beneficial if not required in Mao. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to vary said determined polarization based on comparing a value with a corresponding to the power of a received pulse with a reference value.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Way provides relevant art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agustin Bello whose telephone number is (571) 272-3026. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Agustin Bello
Examiner
Art Unit 2633

AB